

L74 ANSWER 10 OF 10 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: AAR76995 Protein DGENE
 TITLE: New pre-coelenterazine peptide derived from jellyfish green
fluorescent protein - used for prodn. of
 coelenterazine, useful as bioluminescent indicator for e.g.
 cell selection and mutagenicity testing
 INVENTOR: Chalfie M; Ward W
 PATENT ASSIGNEE: (CHAL-I)CHALFIE M.
 (WARD-I) WARD W.
 PATENT INFO: WO 9521191 A 19950810 55p
 APPLICATION INFO: WO 1995-US1425 19950203
 PRIORITY INFO: US 1994-192158 19940204
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 OTHER SOURCE: 1995-283729 [37]
 CROSS REFERENCES: N-PSDB: AAR76995
 DESCRIPTION: Modified jellyfish green **fluorescent**
protein gfp (C197A).

TI New pre-coelenterazine peptide derived from jellyfish green
fluorescent protein - used for prodn. of
 coelenterazine, useful as bioluminescent indicator for e.g. cell
 selection and mutagenicity testing

AI WO 1995-US1425 19950203

DESC Modified jellyfish green **fluorescent protein** gfp
 (C197A).

KW Jellyfish; pre-coelenterazine peptide; bioluminescent indicator; green
fluorescent protein; gfp (C197A); marker.

SEQ

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1 xskgeelftg vvpilveldg dvnghkfsvs gegedatyg kltlkfictt
51 gklpvpwptl vttfyygvqc fsrypdhmkq hddfkssampe gyvqertiff
101 kddgnyktra evkfegdtlv nrielkgidf kedgnilghk leynynshnv
151 yimadkqkng ikvnfkirhn iedgsvqlad hyqqntpigd gpvllpdnhy
201 lstqsalskd pnekrdhmvl lefvtaagit hgmdelyk

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AN AAR76995 Protein DGENE

AA 8 A; 6 R; 13 N; 18 D; 0 B; 2 C; 8 Q; 16 E; 0 Z; 22 G; 10 H; 12 I;
 19 L; 20 K; 5 M; 13 F; 10 P; 10 S; 15 T; 1 W; 12 Y; 17 V; 1 Others

SQL

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1 xskgeelftg vvpilveldg dvnghkfsvs gegedatyg kltlkfictt
51 gklpvpwptl vttfyygvqc fsrypdhmkq hddfkssampe gyvqertiff
101 kddgnyktra evkfegdtlv nrielkgidf kedgnilghk leynynshnv
151 yimadkqkng ikvnfkirhn iedgsvqlad hyqqntpigd gpvllpdnhy
201 lstqsalskd pnekrdhmvl lefvtaagit hgmdelyk

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FEATURE TABLE:

Key	Location	Qualifier
Misc-difference	1	label Methionyl-Ala
Misc-difference	80	label Q,R
Misc-difference	100	label F,Y
Misc-difference	108	label T,S
Misc-difference	141	label L,M
Misc-difference	172	label E,K
Misc-difference	219	label V,I
Misc-difference	229..238	note "any of these AAs may be omitted"

L81 ANSWER 83 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1990:113291 CAPLUS

DOCUMENT NUMBER: 112:113291

TITLE: Candida glabrata metallothioneins. Cloning and
sequence of the genes and characterization of proteins
AUTHOR(S): Mehra, Rajesh K.; Garey, James R.; Butt, Tauseef R.;
Gray, William R.; Winge, Dennis R.

CORPORATE SOURCE: Med. Cent., Univ. Utah, Salt Lake City, UT, 84132, USA

SOURCE: Journal of Biological Chemistry (1989),

264(33), 19747-53

CODEN: JBCHA3; ISSN: 0021-9258

DOCUMENT TYPE: Journal

LANGUAGE: English

SO Journal of Biological Chemistry (1989), 264(33), 19747-53

CODEN: JBCHA3; ISSN: 0021-9258

AB . . . cysteines in a Cys-X-X-Cys sequence. The sequence of MT-II
contains 16 cysteinyl residues, 14 of which are in Cys-X-Cys sequences.
Fluorescence spectroscopy indicates the presence of Cu(I)-thiolate
bonds in both proteins. The binding stoichiometries are 11-12 for MT-I
and 10 for. . .

IT 125691-56-7, Metallothionein II (Candida glabrata strain 67 protein moiety
reduced) 125691-65-8, Metallothionein I (Candida glabrata strain
67 protein moiety reduced)

RL: PRP (Properties)

(amino acid sequence of)

IT 125691-65-8, Metallothionein I (Candida glabrata strain 67 protein
moiety reduced)

RL: PRP (Properties)

(amino acid sequence of)

RN 125691-65-8 CAPLUS

CN Metallothionein I (Candida glabrata strain 67 protein moiety reduced)
(9CI) (CA INDEX NAME)

SEQ 1 MANDCKCPNG CSCPNCANGG CQCGDKCECK KQSCHGCGEQ CKCGSHGSSC
51 HGSCGCGDKC DCK

L81 ANSWER 44 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:489864 CAPLUS

DOCUMENT NUMBER: 119:89864

TITLE: Expression, purification, and physicochemical characterization of a recombinant Yersinia protein tyrosine phosphatase

AUTHOR(S): Zhang, Zhong Yin; Clemens, James C.; Schubert, Heidi L.; Stuckey, Jeanne A.; Fischer, Mark W. F.; Hume, Daniel M.; Saper, Mark A.; Dixon, Jack E.

CORPORATE SOURCE: Dep. Biol. Chem., Univ. Michigan, Ann Arbor, MI, 48109, USA

SOURCE: Journal of Biological Chemistry (1992), 267(33), 23759-66

CODEN: JBCHA3; ISSN: 0021-9258

DOCUMENT TYPE: Journal

LANGUAGE: English

SO Journal of Biological Chemistry (1992), 267(33), 23759-66

CODEN: JBCHA3; ISSN: 0021-9258

AB established that the Yersinia PTPases exist and function as monomers in soln. Yop51 and Yop51* display identical UV, CD, and **fluorescence** spectra and have identical kinetic and structural stability properties. These full-length Yersinia PTPases have 31% .alpha.-helix, an emission max. of . . . at pH 5.0, 30.degree.C, and an unfolding .DELTA.G value of 6 kcal/mol at 25.degree.C. Yop51*.DELTA.162 has very similar kinetic and **fluorescence** characteristics to the full-length mols., whereas its CD and UV spectra show noticeable differences due to the elimination of 162. . . .

IT 123781-29-3

RL: PRP (Properties); BIOL (Biological study)
(amino acid sequence of, complete)

IT 123781-29-3

RL: PRP (Properties); BIOL (Biological study)
(amino acid sequence of, complete)

RN 123781-29-3 CAPLUS

CN Protein (plasmid pYVe227 clone pTM200 gene yop51 reduced) (9CI) (CA INDEX NAME)

SEQ 1 MNLSLSDLHR QVSRLVQQES GDCTGKLRGN VAANKETTFQ GLTIASGARE
51 SEKVFAQTVL SHVANIVLTQ EDTAKLLQST VKHNLNNYEL RSVGNGNSVL
101 VSLRSDQMTL QDAKVLLEAA LRQESGARGH VSSHSHSVLH APGTPVREGL
151 RSHLDPRTPP LPPRERPHTS GHGAGEARA TAPSTVSPYG PEARELSSR
201 LTTLRNTLAP ATNDPRYLQA CGGEKLNRF R DIQCCRQTAV RADLNANYIQ
251 VGNTRTIACQ YPLQSQLESH FRMLAENRTP VLAVLASSSE IANQRFGMPD
301 YFRQSGTYGS ITVESKMTQQ VGLGDGIMAD MYTLTIREAG QKTISVPVH
351 VGNWPDQTAV SSEVTKALAS LVDQTAETKR NMYESKGSSA VADDSKLRPV
401 IHCRAGVGRT AQLIGAMCMN DSRNSQLSVE DMVSQMRVQR NGIMVQKDEQ
451 LDVLIKLAEG QGRPLLNS

L81 ANSWER 94 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1977:38948 CAPLUS

DOCUMENT NUMBER: 86:38948

TITLE: Conformational characteristics of luliberin. Circular dichroism and **fluorescence** studies

AUTHOR(S): Marche, Pierre; Montenay-Garestier, Therese; Helene, Claude; Fromageot, Pierre

CORPORATE SOURCE: Dep. Biol., CEN Saclay, Gif sur Yvette, Fr.

SOURCE: Biochemistry (1976), 15(26), 5730-7

CODEN: BICHAW; ISSN: 0006-2960

DOCUMENT TYPE: Journal

LANGUAGE: English

TI Conformational characteristics of luliberin. Circular dichroism and **fluorescence** studies

SO Biochemistry (1976), 15(26), 5730-7

CODEN: BICHAW; ISSN: 0006-2960

AB By CD and **fluorescence** spectroscopy, the conformation of luliberin (LH-releasing hormone) was investigated under various conditions of pH and solvents. Several structural parameters were.

IT Circular dichroism

Fluorescence

(of luliberin)

IT 2382-79-8 33217-51-5 53412-64-9 59189-94-5

RL: PRP (Properties)

(CD and **fluorescence** of, luliberin in relation to)

IT 9034-40-6 35263-73-1 35544-05-9 37077-35-3 38234-21-8 47921-88-0

51278-37-6 **51586-28-8**

RL: PRP (Properties)

(conformation of)

IT **51586-28-8**

RL: PRP (Properties)

(conformation of)

RN 51586-28-8 CAPLUS

CN Luteinizing hormone-releasing factor (swine), 3-glycine- (9CI) (CA INDEX NAME)

NTE modified

SEQ 1 XHGSYGLRPG

L21 ANSWER 13 OF 15 MEDLINE on STN DUPLICATE 8

ACCESSION NUMBER: 96305135 MEDLINE
DOCUMENT NUMBER: 96305135 PubMed ID: 8707051
TITLE: Dual color microscopic imagery of cells expressing the
green fluorescent protein and a **red**
-shifted variant.
AUTHOR: Yang T T; Kain S R; Kitts P; Kondepudi A; Yang M M; Youvan
D C
CORPORATE SOURCE: Cell Biology Group, CLONTECH Laboratories, Inc., Palo Alto,
CA 94303, USA.
CONTRACT NUMBER: GM42645 (NIGMS)
SOURCE: GENE, (1996) 173 (1 Spec No) 19-23.
Journal code: 7706761. ISSN: 0378-1119.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199609
ENTRY DATE: Entered STN: 19960919
Last Updated on STN: 19980206
Entered Medline: 19960911

AB The **green** fluorescent protein (GFP) from the **jellyfish**
, *Aequorea victoria*, has become a versatile reporter for monitoring gene
expression and protein localization in a variety of cells and organisms.
GFP emits bright **green** light (lambda max = 510 nm) when excited
with ultraviolet (UV) or **blue** light (lambda max = 395 nm, minor
peak at 470 nm). The chromophore in GFP is intrinsic to the primary
structure of the protein, and fluorescence from GFP does not require
additional gene products, substrates or other factors. GFP fluorescence
is stable, species-independent and can be monitored noninvasively using
the techniques of fluorescence microscopy and flow cytometry [Chalfie et
al., Science 263 (1994) 802-805; Stearns, Curr. Biol. 5 (1995) 262-264].
The protein appears to undergo an autocatalytic reaction to create the
fluorophore [Heim et al., Proc. Natl. Acad. Sci. USA 91 (1994)
12501-12504] in a process involving cyclization of a Tyr66 aa residue.
Recently [Delagrave et al., Bio/Technology 13 (1995) 151-154], a
combinatorial mutagenic strategy was targeted at aa 64 through 69, which
spans the chromophore of *A. victoria* GFP, yielding a number of different
mutants with **red**-shifted fluorescence excitation spectra. One
of these, RSGFP4, retains the characteristic **green** emission
spectra (lambda max = 505 nm), but has a single excitation peak (lambda
max = 490 nm). The fluorescence properties of RSGFP4 are similar to those
of another naturally occurring GFP from the sea pansy, *Renilla reniformis*
[Ward and Cormier, Photobiochem. Photobiol. 27 (1978) 389-396]. In the
present study, we demonstrate by fluorescence microscopy that selective
excitation of *A. victoria* GFP and RSGFP4 allows for spectral separation of
each fluorescent signal, and provides the means to image these signals
independently in a mixed population of bacteria or mammalian cells.

L21 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:809926 CAPLUS
DOCUMENT NUMBER: 136:114436
TITLE: Color transitions in coral's fluorescent proteins by
site-directed mutagenesis
AUTHOR(S): Gurskaya, Nadya G.; Savitsky, Alexander P.;
Yanushevich, Yurii G.; Lukyanov, Sergey A.; Lukyanov,
Konstantin A.
CORPORATE SOURCE: Shemiakin and Ovchimiikov Institute of Bioorganic
Chemistry, Moscow, 117871, Russia
SOURCE: BMC Biochemistry [online computer file] (2001), 2, No
pp. given
CODEN: BBMIB3
URL: <http://www.biomedcentral.com/content/pdf/1472-2091-2-6.pdf>
PUBLISHER: BioMed Central Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Green** Fluorescent Protein (GFP) cloned from **jellyfish** *Aequorea victoria* and its homologs from corals Anthozoa have a great practical significance as in vivo markers of gene expression. Also, they are an interesting puzzle of protein science due to an unusual mechanism of chromophore formation and diversity of fluorescent colors. Fluorescent proteins can be subdivided into cyan (.apprx.485 nm), **green** (.apprx.505 nm), yellow (.apprx.540 nm), and **red** (>580 nm)emitters. The authors applied site-directed mutagenesis in order to investigate the structural background of color variety and possibility of shifting between different types of fluorescence. First, a **blue**-shifted mutant of cyan amFP486 was generated. Second, it was established that cyan and **green** emitters can be modified so as to produce an intermediate spectrum of fluorescence. Third, the relationship between **green** and yellow fluorescence was inspected on closely homologous **green** zFP506 and yellow zFP538 proteins. The following transitions of colors were performed: yellow to **green**; yellow to dual color (**green** and yellow); and **green** to yellow. Fourth, the authors generated a mutant of cyan emitter dsFP483 that demonstrated dual color (cyan and **red**) fluorescence. Several amino acid substitutions were found to strongly affect fluorescence maxima. Some positions primarily found by sequence comparison were proved to be crucial for fluorescence of particular color. These results are the first step towards predicting the color of natural GFP-like proteins corresponding to newly identified cDNAs from corals.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 11 OF 15 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 7

L21 ANSWER 6 OF 15 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 5

ACCESSION NUMBER: 2001:492942 BIOSIS

DOCUMENT NUMBER: PREV200100492942

TITLE: Mutagenesis and characterization of **red**
fluorescent protein.

AUTHOR(S): Nolan, Alexandra M. (1); Naik, Rajesh R. (1); Stone, Morley
O. (1)

CORPORATE SOURCE: (1) Materials and Manufacturing Directorate, AFRL/MLPJ,
3005 P St, Bldg 651, Wright-Patterson Air Force Base, OH,
45433: alexandra.nolan@afrl.af.mil USA

SOURCE: Abstracts of Papers American Chemical Society, (2001) Vol.
222, No. 1-2, pp. BIOL51. print.
Meeting Info.: 222nd National Meeting of the American
Chemical Society Chicago, Illinois, USA August 26-30, 2001
American Chemical Society
. ISSN: 0065-7727.

DOCUMENT TYPE: Conference

LANGUAGE: English

SUMMARY LANGUAGE: English

AB **Green** fluorescent protein (GFP) from the **jellyfish**

Aequorea victoria has widely been used in cell biology over the last decade. When excited with near ultraviolet (UV) light (395nm), wild type GFP emits **green** light at 509 nm. Since the cloning and expression of the gene encoding GFP, this molecule has been studied extensively and utilized for various biomedical applications. Mutagenesis of the gene encoding GFP has also proven itself to be a valuable tool. For example, mutagenesis of wildtype GFP has improved properties such as photostability and quantum efficiency. Mutagenesis has also yielded GFP-variants with fluorescent hues ranging from **blue** to yellow. Recently, a **red** fluorescent protein (RFP) has been isolated from the coral Discosoma. The protein is homologous to GFP in structure and it has a large degree of amino acid conservation. However, when compared to GFP, RFP takes nearly twice as long to fold and has a much lower quantum yield. Through mutagenesis, we attempted to create variations of RFP with improved folding efficiency and a higher quantum yield.